

The ninth Trondheim Conference on Biodiversity
Trondheim, 2-5 July 2019

Making biodiversity matter

Knowledge and know-how for the post-2020 global biodiversity framework

Report of the Co-chairs

The primary purpose of the Trondheim Conference is the conversations amongst participants, supported by the many inputs made. The intention is that the exchanges provide participants, and in particular negotiators, with increased understanding of a range of issues relevant to the upcoming negotiations. These exchanges are about exploring and testing ideas, not coming to a final solution. This report can in no way capture all of those conversations and the many inputs, but it is not intended to do so. Having said that all records made on paper or through electronic means are also available from the conference website www.trondheimconference.org.

UNDERSTANDING WHERE WE ARE HEADING AND WHAT THIS IMPLIES

There are increasing and grave concerns over the impacts of loss of biodiversity. A key concern is the interlinkages with climate change, as the two are accelerating and mutually reinforcing due to human expansion on Earth. Despite limited time to respond, there is a strong determination to succeed in halting biodiversity loss together with halting global warming and achieving sustainable development. There is a good knowledge base on which to build, both from science and from the wealth of experiences – both good and bad – in addressing the Aichi Biodiversity Targets over the previous decade.

- Concern over biodiversity loss is becoming more and more central to the global debate, and more important, including through links to other key agendas such as the drive to address climate change and its impacts. Biodiversity on land and in the ocean is seen as fundamental for achieving the other Sustainable Development Goals, as is the need to address the goals synergistically through transformative change.
- The cost of inaction makes biodiversity loss an issue of importance to all sectors. As a result, there are increasing efforts to understand the importance of biodiversity and to respond, amongst diverse stakeholders. However, this will need scaling up into a more ambitious ‘action agenda’ addressing the main drivers of biodiversity loss.
- There is an increasing recognition of the importance of “nature-based solutions” that address needs across sectors, especially with regard to achieving the objective of the Paris Agreement on climate change. Linked to this, is an increased focus on the need for an ‘enabling environment’ which identifies the necessary understanding, commitment and resources for developing and scaling up solutions, and for tracking and reporting on success or otherwise.
- Scientists warn that we may be heading for fundamental change in Earth systems as a result of changes in the biosphere. The nature and speed of loss, and the fact that loss is continuing despite current efforts, means that we need to focus now on more transformative solutions.

- This requires better understanding of the direct and indirect drivers of change, and of how to respond to them, so as to 'bend the curve' of biodiversity loss in a manner that simultaneously addresses the full suite of Sustainable Development Goals, and especially climate change, food security, nutrition and health, recognising and responding to interconnections.
- This also needs engagement with stakeholders at all levels and in all relevant sectors, so as to ensure appropriate action at all levels from global to sub-national, and by actors ranging from the private sector to indigenous peoples and local communities.

Using and building on the available knowledge base including local and indigenous knowledge is essential for guiding policy and practice, and assessment reports are particularly valuable in this regard. The wide sharing of assessment findings, and their discussion in conferences such as this one, increases understanding of the findings and their implications for policy development and implementation in the future.

- It is widely accepted that biodiversity underpins and sustains human quality of life, providing basic materials that support human livelihoods, cultures and economies. Life on land and in the ocean also underpins delivery of the Sustainable Development Goals (SDG). However global trends in nature's contributions to people are continuing to show decline, and as a consequence the fabric of life is increasingly becoming thinner, simpler and more frayed.
- The effects of drivers of change have accelerated during the past 50 years to levels unprecedented in human history, the main drivers being land use change, direct exploitation, climate change, pollution, and invasive alien species.
- These are impacted by indirect drivers of change, which include population growth, and the massive increases in the global economy and trade including those related to the food system. This brings with it massive increase in connectivity and movement, whether of information, goods, waste or people. The benefits and impacts of this vary across countries and regions, and the environmental costs are rarely understood.
- Most internationally agreed policy goals and targets for biodiversity will be missed by most countries under business as usual scenarios. For example, while there has been some progress in addressing the Aichi Biodiversity Targets, this has been insufficient, nor does it effectively address the root causes of biodiversity loss.
- Plausible scenarios, which include transformative change, are compatible with both achievement of the Sustainable Development Goals and the 2050 Vision for Biodiversity. There will be challenges associated with delivery, as biodiversity loss, climate change and achieving a good quality of life are interconnected, and need to be addressed in a coherent integrated manner.
- However, there is a range of options already available for implementing sustainable pathways to achieving the 2050 Vision for Biodiversity. These options variously involve addressing the root causes of nature deterioration and fostering transformative change. There are many societal responses and successful examples of rapid transformative change is already happening in many sectors.
- There are close links between the biodiversity and climate agendas. Limiting global warming to 1.5°C is possible, but this would require unprecedented transitions in all aspects of society which could also impact on biodiversity without careful planning. It is well understood that a

temperature rise of 1.5°C will have impacts on biodiversity and ecosystem services, increasing with a rise of 2°C or more. At the same time addressing biodiversity goals could also support achievement of this target.

- Efforts to reduce global warming can go hand-in-hand with achieving other goals, but there can also be unintended impacts if this is not done carefully, and an integrated approach is needed, including safeguards. Adaptation interactions with mitigation, as biodiversity, food production and the provision of other ecosystem goods and services may be impacted by land-based deployment of land based CO₂ removal. Meanwhile there is huge potential for addressing biodiversity goals to also support climate goals, including through restoration.
- Biodiversity is essential for agriculture and food production. However the biodiversity for food and agriculture is on the decline, affected by multiple interacting drivers which are much the same as those identified above. Different production systems are affected in different ways, and there are regional differences.
- The use of a wide range of management practices and approaches regarded as favourable to the sustainable use and conservation of biodiversity for food and agriculture (including fisheries) are reported to be increasing, although these need further research and upscaling. Also, enabling frameworks for the sustainable use and conservation of biodiversity for food and agriculture (including fisheries) need strengthening
- It is possible to manage use of the ocean in order to keep it sustainable, but this needs both adequate knowledge and effective management. This will include new governance approaches, necessary in the oceans to address biodiversity loss and its impacts, including those relating to food security.
- All assessments show benefits from biodiversity and ecosystem services, and impacts on them, that vary from country to country, and from region to region, and all assessments emphasise the interconnected nature of the various drivers of change, as well as the need to consider multiple agendas when considering responses.
- The understanding of interlinkages is critical to being able to respond in meaningful and sustainable ways to environmental change, and this includes not only understanding of the interactions among the different drivers of change and their impacts, but also the interactions among the different sectors and their needs and aspirations. To be both successful and cost-effective it is necessary to respond in coherent ways and address multiple needs.

FURTHER DEVELOPING THE VISION OF WHERE WE NEED TO BE

Our vision for biodiversity, adopted in 2010, is of a world *“living in harmony in nature”*, where *“by 2050 biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”*. We need a better understanding of what this means in concrete terms, and what is necessary to get there.

- Our vision is one of *“living in harmony with nature”*, but globally the human species is not living in harmony with nature. And damage to nature is affecting human wellbeing, including health, nutrition and food security, despite efforts to address the Aichi Biodiversity Targets in recent years.
- Meanwhile land and water use changes, including their management for food and agriculture, and the level of fishing in the ocean, are very significant drivers of change, further exacerbated

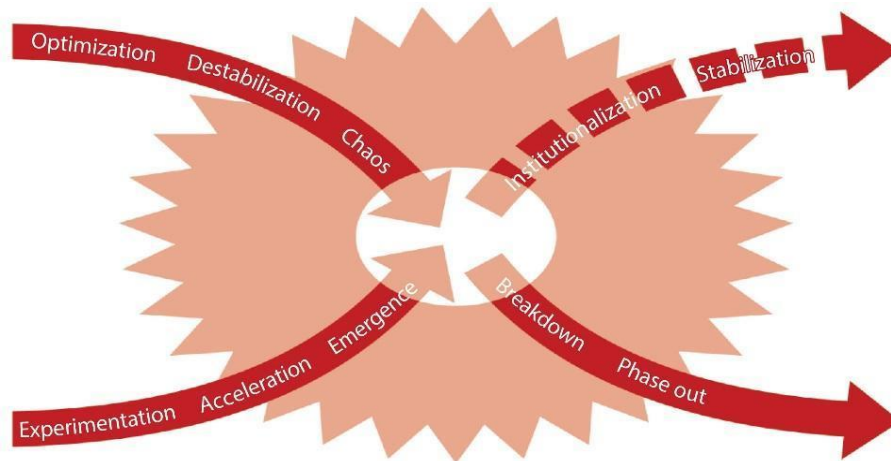
by the effects of climate change. This further underlines the need to ‘connect for change’ everywhere. If we are talking about biodiversity, we also need to be talking about climate, food, and health, and so on.

- In view of the interconnections between biodiversity, climate change and food security, we need to move to a situation where we can ‘bend the curve’ of biodiversity loss while addressing development issues and inequalities, focusing on these multiple challenges, and aiming to move from a ‘vicious circle’ where interconnections are insufficiently addressed to a ‘virtuous circle’ where they are actively addressed.
- Scenario and model analysis tells us that we can bend the curve of biodiversity loss with ambitious efforts in conservation and sustainable use, but to do it sufficiently and by 2030 will require a more integrated portfolio of actions that also address both the demand and supply side of resource use.
- By 2030 we could aim for zero loss of natural habitats, zero extinction of species, and to halve the ecological footprint of production and consumption. The case could be made that such an approach would provide the basis for delivering food and water for 9 billion people, a stable climate, diversity of life and inclusive communities.
- In order to achieve these changes, and get such actions underway, people must be at the centre of, and part of the decision making, and not simply the object. Similarly we will need to engage with all peoples and communities, and especially indigenous peoples and local communities.
- This requires effective communication, and the use of language that is understandable and meaningful in terms of the changes that we want to achieve.
- In order to prevent environmental risk, actors, both state and non-state, need to be accountable for their actions in a transparent way. It is also necessary to be able to assess whether those actions are together sufficient for bending the curve of biodiversity loss by 2030, which also implies a need for common scales, ‘add-up-ability’.
- Change is needed in order to get on any of the pathways for achieving the 2050 Vision for Biodiversity. Are we ready to let go and follow change as it happens?

There are multiple possible pathways to achieving the 2050 Vision for Biodiversity, involving different approaches to production systems, land use planning, regulation and consumer choices. These possible pathways can be investigated through scenario analysis and consideration of ‘nature futures’, and through relating them to the different perspectives of ‘nature for nature’, ‘nature for culture’, and ‘nature for society’.

- The possible pathways can also be considered as part of a ‘theory of change’ for delivering the 2050 vision for biodiversity, which identifies more clearly the proposed actions, outputs and intended outcomes. The more detailed aspects of this will be addressed below, but in the first interactive exercise conference participants were asked back-cast from the vision 2050 “Living in Harmony with Nature” and brainstorm **which potential pathways would be required to get there**. The broad range of possible pathways showed how multifaceted the approach to 2050 needs to be. The following clusters summarise the diversity of potential pathways:
 - 1 Educate, communicate
 - 2 Change human behaviour, perceptions and commitment
 - 3 Change food systems

- In describing the potential disruption, the following diagram was used to demonstrate that over time things change, leading to patterns of destabilization, emerging initiatives, and building blocks for a sustainable future. In order to embrace this we need to change considering the future we want to see, and to recognise that change is already happening.



 Loorbach D, et al. 2017.
Annu. Rev. Environ. Resour. 42:599–626

A number of presentations then gave examples of actions that were already being taken to try to move away from ‘business as usual’, the aim being to demonstrate that there were some very real efforts to drive change that could provide opportunities to learn from. These could also provide the basis for subsequent group discussion on ‘building on good practice’.

- One of the main strategies for delivering change already embraced by Parties to the Convention on Biological Diversity (CBD) is that of mainstreaming, which includes many potential tools and actions for creating a change in approach through policies, strategies, practices, legislation, institutional structures, budgets, stakeholder engagement, and indicators. As part of this approach, it is important to build the case for biodiversity among sectors, and to open new and reciprocal communication channels.
- An example was provided on steps taken in Mexico to actively engage with other sectors, leading to outputs such as the pollinators’ conservation strategy, the mainstreaming biodiversity centre within the Ministry of Agriculture, and interactive tools for assessing incentive schemes. The main activities were identified as being inter-sectorial coordination, capacity building and communication. Key lessons learnt were the importance of political will and international cooperation, the fact that there was no unique blueprint, that climate change was a prime common leverage agenda, and understanding the different values for the different sectors.
- The IPBES thematic assessment on land degradation and restoration has shown that land degradation is pervasive and extensive, covering all terrestrial and inland water ecosystems worldwide. Degradation materially reduces the wellbeing of 3.2 billion people, and it is necessary to address this if we are to solve other problems.
- Halting land degradation and restoring degraded land is a solution common to multiple agendas. Avoiding and slowing degradation is possible in all systems, and there are known solutions. But we need to increase effort, focusing on the state of nature we want, rather than a historical aspiration. Proven actions to avoid, slow and reverse degradation include: improvement of detection, monitoring and verification systems; coordinate policy between different agencies;

eliminate ‘perverse incentives’ and promote positive incentives; and provide consumers the information they need to make informed decisions.

- Using the UN Decade on Ecosystem Restoration 2021-2030 as a driver of change provides impetus for massively scaling up restoration of degraded and destroyed ecosystems as a measure to fight the climate crisis, and with appropriate safeguards to also enhance food security, water supply and biodiversity. Ecosystem restoration provides multiple benefits, but also incurs potential costs. It is therefore important to identify areas where benefits can be optimised and costs minimised.
- Brazil has developed a strategic approach to restoration planning, involving scenario development, understanding of benefits, development of tools/outputs, and validation and dissemination, through a process involving full stakeholder engagement. Global models have since been developed, allowing visualisation of priority areas for restoration under different scenarios. This has led to development of maps of global priority areas for restoration based on and integrating different criteria (biodiversity, climate, food) and current agricultural land.
- China has established an approach known as “ecological civilization”, which includes the mapping of major function oriented zoning, key eco-function regions, and ecological protection red lining. The three eco-function regions are ecological space, production space and living space. Areas with important ecological functions (water supply, disaster risk reduction, etc.) or are important for conservation and sustainable use of biodiversity are being conserved with strict measures as a basis for safeguarding and maintaining national ecological security.
- Ecological conservation redline policy is based on a significant information base, scientific assessment, and a balance of conservation and development. This includes looking at existing protected areas, and also now at mapping carbon sequestration areas. Ecological conservation redlining has priority over other sectorial interests.
- The “Business for Nature Coalition” has been established to facilitate a united voice from business to help reverse the loss of biodiversity and to restore the planet’s vital systems. The aim is to encourage business to bring forward and scale up business solutions, to demonstrate business ambition, and to convene a united business voice, as well as to demonstrate that nature protection makes economic sense, in particular in the context of the World Economic Forum Global Risk Report findings.
- Business has the potential to deliver for nature through four approaches: working through their own operations and value chains to avoid impacts and identify dependencies; leading multi-stakeholder landscape and seascape level collaboration; implementing systemic change to organization, business models and decision making; and recommending and promoting policy changes to governments. As part of this business leaders also want to actively engage in developing the post-2020 global biodiversity framework, and calling for a coherent and simplified narrative.
- Indigenous peoples are custodians of a large proportion of the Earth’s land surface, much of it under some form of conservation measures. There has also been increasing recognition of the importance of engaging indigenous peoples and local communities in international fora addressing issues such as biodiversity and climate change. However there remain concerns over access to and protection of indigenous knowledge, as well as other human rights violations.

- In a range of countries approaches are being developed for increasing the engagement of indigenous and local peoples in the effective management of biodiversity and ecosystem services, including through participatory processes, involvement in governance and decision making, joint planning, and employment in key positions. This includes recognition of the role that local and indigenous peoples play in conservation and sustainable use of biodiversity.
- Finally, looking at other sectors also provides lessons learnt that could be applied in moving away from business as usual. For example, with climate change and the Paris Agreement there has been a move towards establishing the conditions for a perpetual negotiation, with the pressure on countries to achieve carbon neutrality. With the ozone hole and Montreal Protocol, there was a well understood causality, and few actors to reach out to. With land degradation, innovative public-private partnerships have been developed for mobilizing resources for the Land Degradation Neutrality Fund. Synergies between chemical conventions are an inspiring example of organization of a crowded landscape.

BIODIVERSITY AS PART OF THE SOLUTION

From earlier discussions it is clear that it is important to get other actors involved, and to consider how best to develop a coherent and integrated approach to the conservation and sustainable use of biodiversity in the context of full understanding of the multiple values of biodiversity, and how it is relevant to multiple agendas. This was addressed in a panel discussion engaging those with experience of other sectors.

- Nature-based solutions are an important approach for addressing multiple agendas. This includes restoration as a major tool in addressing, for example, the climate agenda. The question was therefore posed as to why there is not greater investment, including from the climate fund, in this area.
- There are good examples of recovery of fisheries. Sustainability rests on environmental, social and economic pillars, and is not simply an ecological issue that needs to be addressed in rebuilding fisheries. Key factors are: science advice welcomed by management; holistic management; stakeholder engagement; and effective management/governance.
- It is important to think about biodiversity as a solution, rather than to focus on biodiversity loss. Food is great focus for discussion as everyone is able to engage, and this can open up conversations on sustainability, water and land use, biodiversity and climate issues, and so on. Understanding and developing interconnections are therefore essential, defining common objectives and ways to work together.
- Population growth combined with urbanization is a major challenge for biodiversity and ecosystem services, but there are also opportunities though working with local and subnational governments. There are examples of cities that have taken significant steps to 'green' themselves through a range of different approaches, providing experience that can be built on.
- Water security is essential to agriculture, energy and human wellbeing. Wetlands are essential filters for freshwater, play an important role in disaster risk reduction, carbon sequestration and storage, support livelihoods based on fishing and aquaculture, and provide space for biodiversity. There is a need integrated approaches and increased cooperation at all levels.
- Biodiversity is similarly important for health, whether through access to medicinal products, access to a healthy environment (air, water, etc.), or access to food and nutrition. Many of the

BUILDING ON THE EXPERIENCE FROM THE CONVENTION ON BIOLOGICAL DIVERSITY

There is already significant experience in implementing the Convention on Biological Diversity, and it is important to draw on this experience in developing the post-2020 global biodiversity framework. Much of this experience will be drawn on directly through the process established by the Convention to develop the framework, but it will be important to ensure that all relevant input is taken into account, including that from other processes.

- Information on the process for development of the post-2020 global biodiversity framework is provided on the CBD website at www.cbd.in/post2020 and in a document attached to [CBD Notification 2019-049](#). It is important to ensure that Parties and other stakeholder have opportunities to make input throughout the process, and there have already been a series of regional consultations and a consultation with other relevant conventions and processes. These have provided significant opportunity for sharing views. Parties and stakeholders have also submitted views in response to an initial information document. A synthesis of views has recently been made available in document [CBD/POST2020/PREP1/INF/2](#).
- The future agenda will include not only meetings of the open-ended working group and the two subsidiary bodies of the Convention, but also a number of additional thematic consultations. A plan for the process will be made available in July (in the lead up to the first meeting of the open-ended working group), and information on all meetings will be made available on the CBD website. There are also ongoing discussions relating to resource mobilization, capacity-building and communication, all of which will also be on the agenda in Kunming.
- In developing the post-2020 global biodiversity framework, it is important to be aware of the experience of Parties in interpreting the Aichi Biodiversity Targets for use at the national level. Malawi used the Aichi Biodiversity Targets as a basis for developing their NBSAP in 2015, but in retrospect recognise that they did not really assess at the time either their readiness to implement the targets, or the level of ambition that was achievable for the country.
- A number of lessons were identified, based on development and early implementation of this NBSAP. Many of these are particularly relevant to development and implementation of NBSAPs, but particularly relevant to development of a post-2020 global biodiversity framework are: clarity of targets is important; invest effort in those approaches that result in maximum biodiversity gains; engage other sectors from the onset of the process; build institutional arrangements to ensure implementation. Additionally, a number of recommendations relevant to the post-2020 process were made. These included the following: the importance of resource mobilization and accountability mechanisms; the need to build capacity to capture, manage and use of data and information, including in indicators and scenario analysis; and the need to invest more in communication.
- The ability to track implementation of the post-2020 global biodiversity framework is essential, and a project is underway to examine options to enhance the measurability of the post-2020 global biodiversity framework. As part of this a workshop was held in February 2019 at OECD Headquarters.¹ Lessons learnt from attempts to use indicators to track the Aichi Biodiversity Targets noted in particular a difficulty in tracking progress in a consistent and comparable way, and reinforced the point that targets and indicators need to be developed at the same time. They in particular called for SMARTer targets with associated indicators. The suggestion was

¹ The report of the workshop can be found at www.oecd.org/environment/resources/biodiversity/Summary-Record-OECD-workshop-The-Post-2020-Biodiversity-Framework-targets-indicators-and-measurability-implications.pdf

made to look for a set of quantified headline indicators relevant and comparable across countries, supported by a larger set of accompanying indicators that are not necessarily relevant everywhere (both covering state, pressure and response). There would then be further indicators for enabling conditions and potentially other process indicators.

- In April 2019, an expert meeting was convened in New York to consider gender equality for a transformational post-2020 global biodiversity framework. This expert meeting suggested that the post-2020 global biodiversity framework should be: rights based, inclusive, participatory and gender-responsible. Key components of the latter include: enhancing women’s agency and promote their effective participation and leadership in biodiversity conservation; promoting and protecting women’s rights and access to resources; and enhancing and ensuring equitable benefits and human well-being. There are more details, including examples of actions to be taken, which will be in the meeting report.²

RESPONDING TO SOCIETY NEEDS

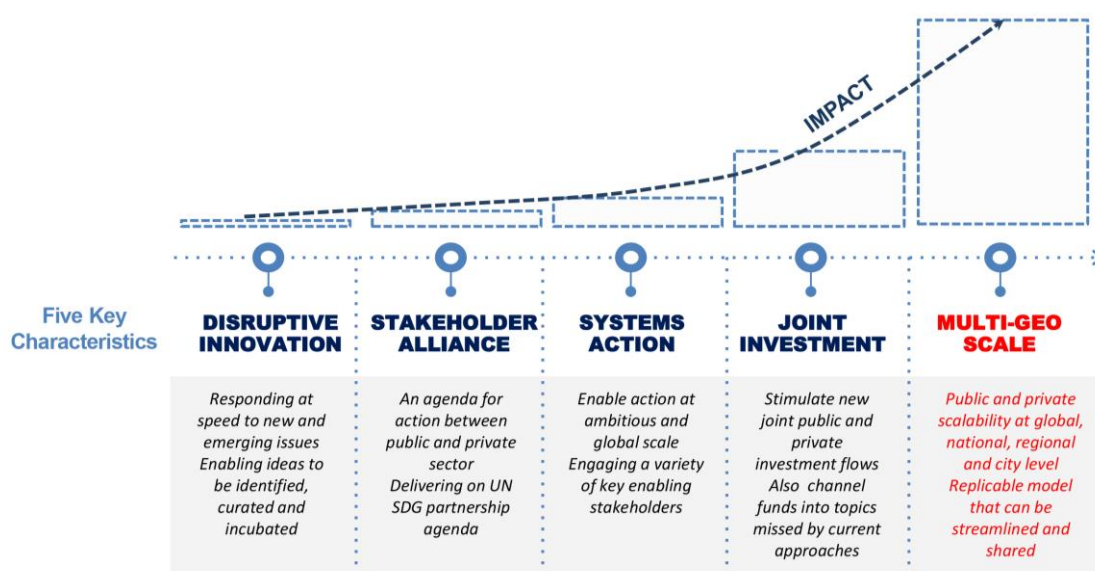
There have been repeated calls for the post-2020 global biodiversity framework to provide a holistic framing of biodiversity-related targets, responding to broader economic and societal needs. There is therefore a need to consider how diverse stakeholder actions build greater ambition and could at the same time be supported through a post-2020 global biodiversity framework.

- In June 2019, a consultative workshop was convened by the CBD with the aim of increasing ownership of the post-2020 global biodiversity framework by engaging with the other biodiversity-related conventions, the other Rio Conventions, and other conventions and processes. This built on earlier work by some of the conventions to align strategies, and on efforts to increase cooperation in implementation as part of the ‘synergies’ process.
- Key messages from the consultative workshop included the following. There was a willingness across all conventions to engage and to be mutually supportive of each other’s activities. This included willingness to participate actively in the post-2020 process. However each convention is different, and has its own independent legal framework, which potentially limits the extent to which everything can be fully aligned. Having said that there are opportunities for coordination of implementation in the context of a post-2020 global biodiversity framework, enhancement of synergies, and for further building coordination at the national level.
- More than a quarter of a century after adoption of the three Rio Conventions, discussions are still ongoing on how to most effectively address biodiversity loss, climate change and land degradation. Each has a convention, each convention has its own governing body and scientific body, and each convention has a national focal point. Each convention also has the same governments as parties, yet they are not yet implemented in a coherent manner, although last year saw a joint meeting of experts from IPBES and IPCC, together with UNESCO and the secretariats of CBD and UNFCCC.³
- However there remains a need to further promote coherent implementation, particularly at the national level, which is the COP Presidency is currently promoting. The initiative aims to guide and support countries to meet, in a synergetic and integrated manner, their objectives and commitments under the three Rio Conventions and the Paris Agreement, as well as the 2030 Agenda for Sustainable Development.

² When it is completed, the report of the expert workshop will be found at www.cbd.int/conferences/post2020/gender

³ The workshop outcomes can be found in information document [CBD/COP/14/INF/22](http://www.cbd.int/doc/2019/06/CBD/COP/14/INF/22).

- There are strategies and strategy process in other sectors where there are biodiversity-related impacts and dependencies. The IPCC is currently working on a number of reports of direct relevance to biodiversity and ecosystem services, which will feed into the UNFCCC process. The Strategic Approach to International Chemicals Management (SAICM) is also working on their strategy for the post-2020 period. SAICM is a voluntary process, but it does involve all key stakeholders, and is also looking at issues relating to biodiversity and ecosystem services. BRS Conventions control a number of serious pollutants, and are therefore directly relevant to control of pollution, one of the key drivers of biodiversity change.
- Each year the World Economic Forum publishes a Global Risks Report that is based on perception of global risk amongst decision makers from the public and private sectors, academia and civil society. Environment-related risks have increased significantly in recent years, and in 2019 top risks in terms of both impact and likelihood include the environmental risks – extreme weather events, failure of climate change mitigation and adaptation, natural disasters, biodiversity loss and ecosystem collapse, and man-made environmental disasters. Additionally, environmental risks are seen to interact substantially with other risks.
- As business sees it, current approaches are not delivering global sustainability, and something extra is required fast. They see the traditional approach as being inflexible, incremental and irrelevant, suggesting a move is needed to something that is innovative, scalable and impact-led. The suggestion is that we should move from a ‘project mentality’ to a ‘platform mentality’ as illustrated in the graphic below prepared by the World Economic Forum. In this regard lessons can be learnt from partnership platforms such as the [Tropical Forest Alliance](#), the [Friends of Ocean Action](#), the [Platform for Accelerating the Circular Economy](#), and the evolving Nature Action Agenda.



IDENTIFYING WHAT WE NEED TO ACHIEVE THE 2050 VISION FOR BIODIVERSITY

- The various consultations to date as part of the post-2020 process, and the submissions from Parties and other stakeholders, have all suggested possible ‘ingredients’ for the post-2020 global biodiversity framework. These have included reference to:
 - Goals for supporting deliver of the vision (or elements of it)
 - Mission and/or apex target

To be added:

Session 10 on Promoting and facilitating action

Session 11 with respect to the implications of cross-cutting issues

To be added from the interactive sessions

Annex 1 – brainstorming on potential pathways for achieving the 2050 vision

Annex 2 – stories to describe potential pathways

Annex 3 – topics for sharing lessons learned in the “open space agenda”

Annex 4 – lessons learned in the “open space agenda”

Annex 5 – fiches from the “open space agenda”

Annex 6 - What does the post-2020 global biodiversity framework need to address

DRAFT